



RADIO FREQUENCY RELAYS

Bulletin 158
RELAYS
Series RFBC

DESCRIPTION

The Hi-G Co., Inc. series of coaxially terminated hermetically sealed relays have been designed to provide reliable switching functions in the most demanding RF applications. The use of military grade relays in the basic construction has been coupled with a unique and improved termination network to insure faultless performance under severe environmental conditions. The design concepts employed in each of these series have been time tested through thousands of hours testing and millions of field operations to provide the highest degree of reliability.

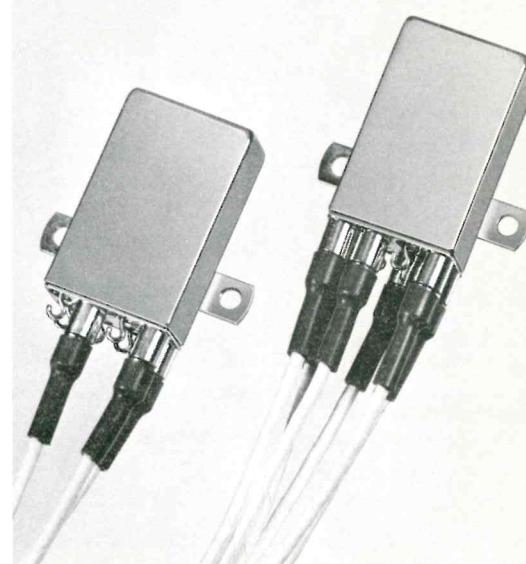
FEATURES

- All welded relay construction.
- Welded coax interconnections.
- 200 watt RF carry capability.
- 75 watt RF switching capability.
- Low level to 2 amp auxiliary switching.
- 1 or 2 form C RF contacts.
- Terminated with 6" RG 196/u teflon cable.

SPECIFICATIONS

ELECTRICAL

Coil Data:	Standard coil resistance available to 10,000 ohms. Design tolerance + 10%.
Sensitivity:	Standard DC sensitivity at pick-up at + 25°C 40 milliwatts.
Contact Rating:	DC (aux): Low level through 2 amperes 28 VDC RF: 75 watts switching 200 watts carry (cold switching)
Contact Resistance:	50 milliohms max. initial 100 milliohms max. after life
Operational Life:	100,000 operations min. at max. rated temperature at max. rated loads.
Operate Time:	13.0 milliseconds max. at +25°C
Release Time:	3.0 milliseconds max. at +25°C
Bounce Time:	2.0 milliseconds max. at +25°C
<u>ENVIRONMENTAL</u>	
Temperature:	- 65° C to + 125° C
Vibration:	20 G's 10 to 2,000 Hz
Shock:	100 G's 11 milliseconds
Sealing:	Hermetic to 1.3 inches Mercury
Insulation Resistance:	1000 megohms min. at 500VDC.
Dielectric Strength:	1000 VRMS at 60 Hz



RADIO FREQUENCY CHARACTERISTICS

Frequency Range:	0 - 500 MHz*
Voltage Standing Wave Ratio (VSWR)	<1.1:1 typical
Insertion Loss:	0.16 db typical
Characteristic Impedance:	50 ohms standard †
Cross Talk:	- 50 db typical
Power Handling:	200 watts maximum
Power Switching:	75 watts maximum

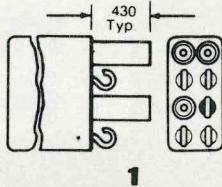
* Derated characteristics to 1000 MHz

† Other impedances available on special order

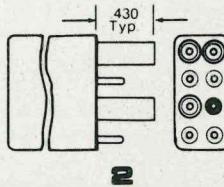


Hi-G CO., INC., 580 Spring Street, Windsor Locks, CT 06096 ■ (203) 623-2481

HEADER STYLES



1

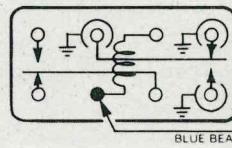


2

NOTE: Terminal spacing 0.2 inch, all headers.

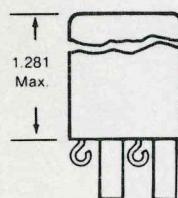
Aux. terminal diameter: 0.030 inch, all headers. RF terminal diameter: .160 inch max.

ELECTRICAL DIAGRAM

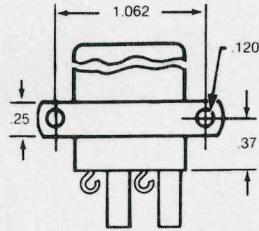


BLUE BEAD

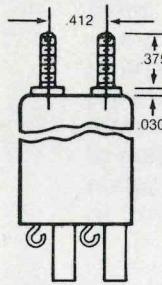
ENCLOSURE STYLES



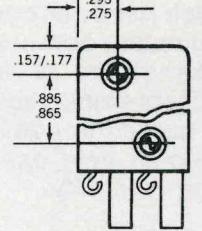
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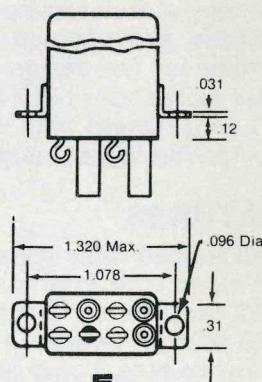
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C



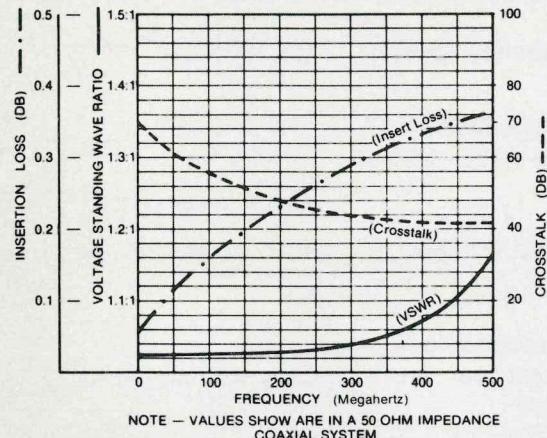
D



E

NOTE: Studs shown are 4-40 NC 2-A

TYPICAL CHARACTERISTICS



Voltage Code	Coil Res. at 25° C	Nominal Coil Voltage (VDC)	Nominal Coil Current (mA)	Max. P.U. Current (mA)	Min. D.O. Current (mA)
101	20	1.8	89.2	44.6	4.5
102	30	2.2	73.0	36.5	3.7
103	50	2.8	56.6	28.3	2.8
104	75	3.5	46.2	23.1	2.3
105	100	4.0	40.0	20.0	2.0
106	200	5.7	28.4	14.2	1.4
107	300	7.0	23.0	11.5	1.2
109	500	9.0	17.8	8.9	.9
112	875	12.0	13.5	6.8	.7
113	1000	12.6	12.6	6.5	6
118	2000	18.0	8.9	4.5	5
120	2500	20.0	8.0	4.0	4
128	5000	28.0	5.6	2.8	3
135	8000	36.0	4.5	2.3	2
140	10000	40.0	4.0	2.0	2

ORDERING INFORMATION

EXAMPLE: RFBC-2A-128

RFBC

2

A
Header
Style

128
Voltage
Code

NOTE: For 2 RF poles, use prefix 2RFBC.

Consult factory for other cable types and lengths.



580 Spring Street
Windsor Locks, Connecticut 06096
Tel. (203) 623-2481

5/75-5M Printed in U.S.A.



75 WATT FULL SIZE RADIO FREQUENCY RELAY

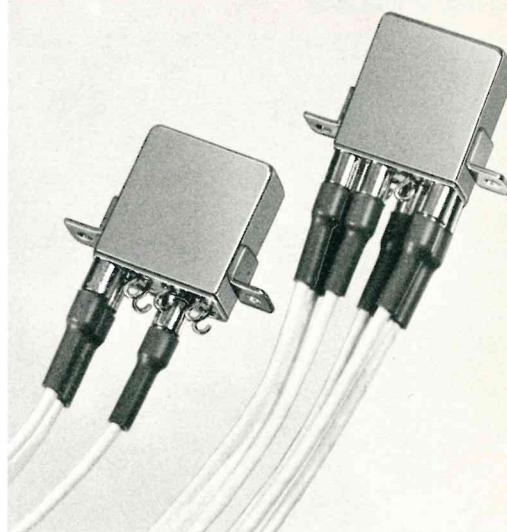
Bulletin 157
RELAYS
Series RFB

DESCRIPTION

The Hi-G Co., Inc. series of coaxially terminated hermetically sealed relays have been designed to provide reliable switching functions in the most demanding RF applications. The use of military grade relays in the basic construction has been coupled with a unique and improved termination network to insure faultless performance under severe environmental conditions. The design concepts employed in each of these series have been time tested through thousands of hours testing and millions of field operations to provide the highest degree of reliability.

FEATURES

- All welded relay construction
- Welded coax interconnections
- 200 watt RF carry capability
- 75 watt RF switching capability
- Low level to 2 amp auxiliary switching
- 1 or 2 form C RF contacts
- Terminated with 6" RG 196/u Teflon® cable



SPECIFICATIONS

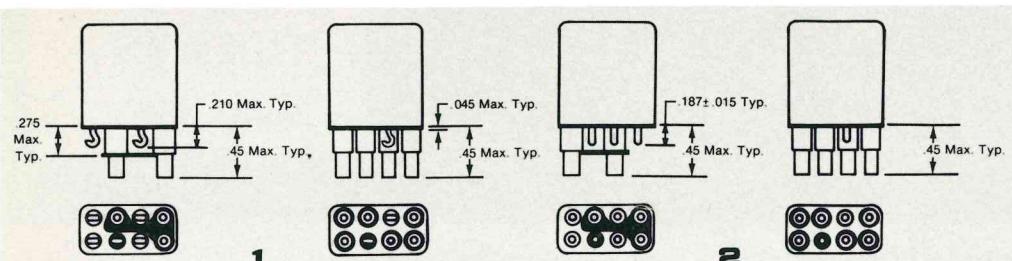
ELECTRICAL

Coil Data:	Standard coil resistance available to 5,000 ohms Design tolerance $\pm 10\%$	RADIO FREQUENCY CHARACTERISTICS
Sensitivity:	Standard DC sensitivity at pick-up at $+25^\circ\text{C}$ 250 milliwatts	Frequency Range: 0 - 500 MHz*
Contact Rating:	DC (aux): Low level through 2 amperes 28 Vdc RF: 75 watts switching 200 watts carry (cold switching)	Voltage Standing Wave Ratio (VSWR): $<1.1:1$ typical
Contact Resistance:	50 milliohms max. initial 100 milliohms max. after life	Insertion Loss: 0.16 dB typical
Operational Life:	100,000 operations min. at max. rated temperature at max. rated loads	Characteristic Impedance: 50 ohms standard †
Operate Time:	6.0 milliseconds max. at $+25^\circ\text{C}$	Crosstalk: -50 dB typical
Release Time:	3.0 milliseconds max. at $+25^\circ\text{C}$	Power Handling: 200 watts maximum
Bounce Time:	2.0 milliseconds max. at $+25^\circ\text{C}$	Power Switching: 75 watts maximum
ENVIRONMENTAL		
Temperature:	- 65° C to + 125° C	* Derated characteristics to 1000 MHz
Vibration:	20 G's 10 to 2,000 Hz	† Other impedances available on special order
Shock:	100 G's 6 milliseconds	
Sealing:	Hermetic to 1.3 inches Mercury	
Insulation Resistance:	1000 megohms min. at 500 Vdc	
Dielectric Strength:	1000 Vrms at 60 Hz	



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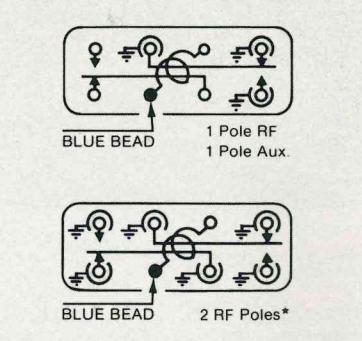
HEADER STYLES



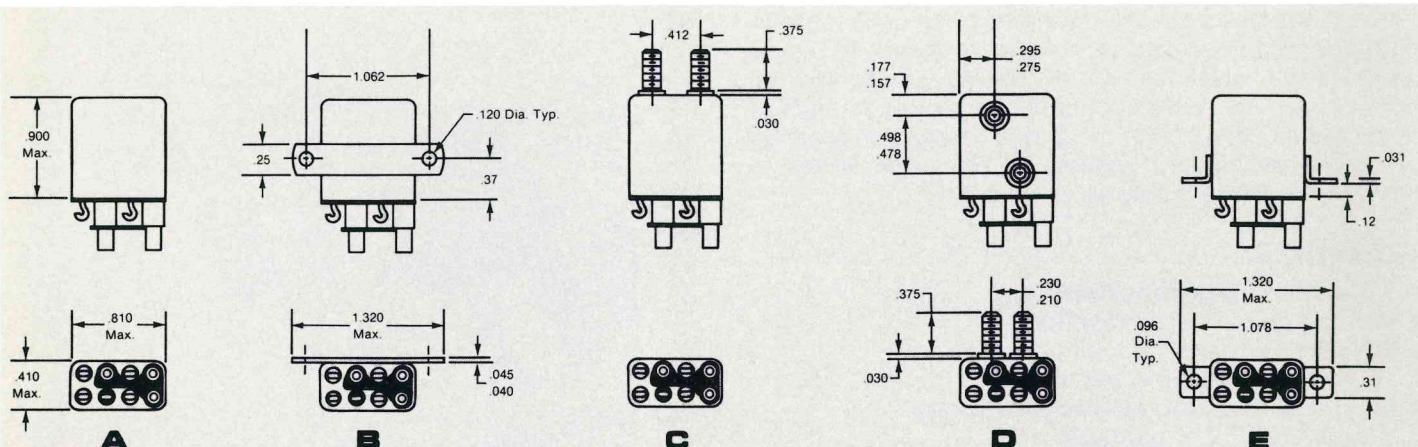
NOTE: Terminal spacing 0.2 inch, all headers.

Aux. terminal diameter: 0.030 inch, all headers. RF terminal diameter: .160 inch max.
1 pole RF versions carry support bracket as shown.

ELECTRICAL DIAGRAM

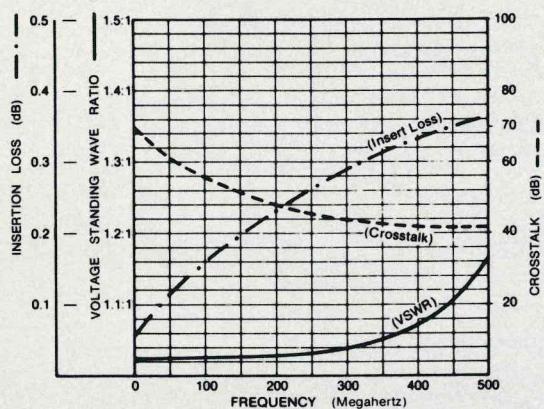


ENCLOSURE STYLES



NOTE: Studs shown are 4-40 NC 2-A.

TYPICAL CHARACTERISTICS



RFB (DC Coil)					
Voltage Code	Nominal Coil Voltage	Max. Continuous Coil Voltage	Max. Pick-up Voltage @ 25°C	Min. Drop-out Voltage @ 25°C	Effective DC Coil Resistance @ 25°C
106	6	7.2	3.1	0.5	40
112	12	14.4	6.3	0.7	160
126	26.5	32.0	13.0	1.5	675
148	48	58.0	25.0	2.5	2500
176	76	90.0	35.0	3.0	5000
RFBR (AC Coil) **					
126	26.5	32	15	2.0	600
148	48	58	28	3.0	2000
176	76	90	44	4.0	3500
215	115	125	66	5.0	10000

NOTE: Values shown are in a 50 ohm impedance coaxial system.

ORDERING INFORMATION

EXAMPLE: RFB-2A-126

RFB
Type 2 A 126
Header Style Enclosure Style Voltage Code

Consult factory for other cable types and lengths.



Hi-G CO., INC.

580 Spring Street
Windsor Locks, Connecticut 06096
Tel. (203) 623-2481



HI-G D'ITALIA s. p. a.

CORSO DELLA REPUBBLICA, 340
CISTERNA DI LATINA, ITALY
TEL. 9699666 / 7 - CABLE: DIGITAL
TELEX: 62412 HIG

1/77-5M Printed in U.S.A.



75 WATT SINGLE POLE RADIO FREQUENCY RELAY

Bulletin 159
RELAYS
Series RFC

DESCRIPTION

The Hi-G Co., Inc. series of coaxially terminated hermetically sealed relays have been designed to provide reliable switching functions in the most demanding RF applications. The use of military grade relays in the basic construction has been coupled with a unique and improved termination network to insure faultless performance under severe environmental conditions. The design concepts employed in each of these series have been time tested through thousands of hours testing and millions of field operations to provide the highest degree of reliability.

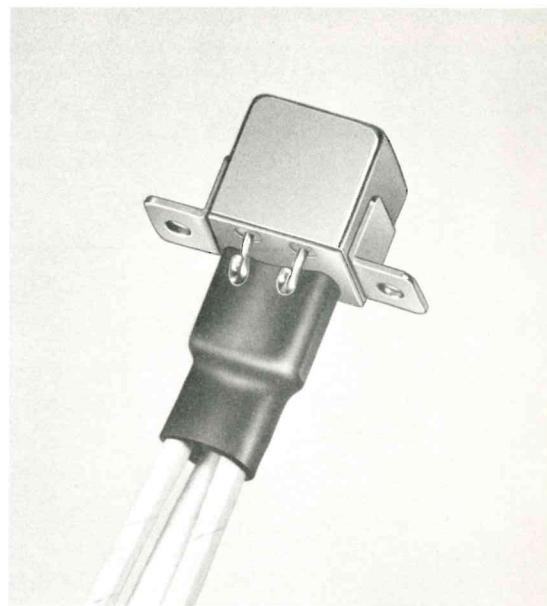
FEATURES

- All welded relay construction
- Welded coax interconnections
- 200 watt RF carry capability
- 75 watt RF switching capability
- 1 form C RF contacts
- Terminated with 6" RG 196/u Teflon® cable

SPECIFICATIONS

ELECTRICAL

Coil Data:	Standard coil resistance available to 1,500 ohms Design tolerance $\pm 10\%$
Sensitivity:	Standard DC sensitivity at pick-up at $+25^\circ\text{C}$ 150 milliwatts
Contact Rating:	75 watts switching 200 watts carry (cold switching)
Operational Life:	100,000 operations min. at max. rated temperature at max. rated loads
Operate Time:	6.0 milliseconds max. at $+25^\circ\text{C}$
Release Time:	3.0 milliseconds max. at $+25^\circ\text{C}$
ENVIRONMENTAL	
Temperature:	- 65° C to + 125° C
Vibration:	20 G's 10 to 2,000 Hz
Shock:	100 G's 6 milliseconds
Sealing:	Hermetic to 1.3 inches Mercury
Insulation Resistance:	1000 megohms min. at 500 Vdc
Dielectric Strength:	1000 Vrms, 60 Hz, to case



RADIO FREQUENCY CHARACTERISTICS

Frequency Range:	0 - 500 MHz*
Voltage Standing Wave Ratio (VSWR):	<1.1:1 typical
Insertion Loss:	0.16 dB typical
Characteristic Impedance:	50 ohms standard †
Crosstalk:	-50 dB typical
Power Handling:	200 watts maximum
Power Switching:	75 watts maximum

* Derated characteristics to 1000 MHz

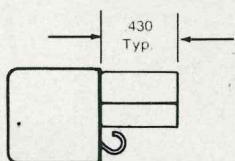
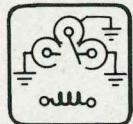
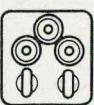
† Other impedances available on special order



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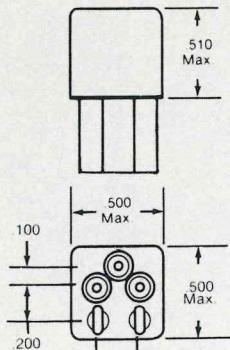
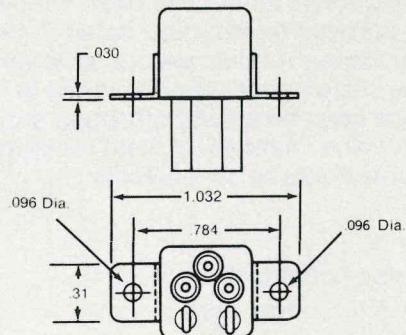
HEADER STYLES

ELECTRICAL DIAGRAM

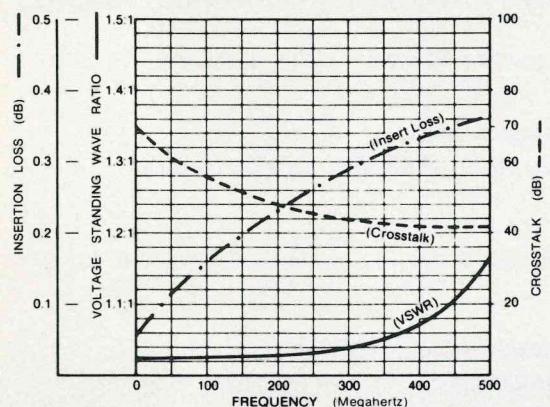
**1**

NOTE: Terminal diameter 0.030 inch, all headers.

ENCLOSURE STYLES

**A****B**

TYPICAL CHARACTERISTICS



Voltage Code	Nominal Coil Voltage	Max. Continuous Coil Voltage	Max. Pick-up Voltage (@ + 25° C)	Min. Drop-out Voltage (@ + 25° C)	Effective DC Coil Resistance (@ + 25° C ohms)
106	6	7.2	3.5	0.5	80
112	12	14.4	7.0	1.0	325
126	26.5	32.0	15.0	2.0	1500

NOTE: Values shown are in a 50 ohm impedance coaxial system.

ORDERING INFORMATION

EXAMPLE: RFC-1A-126**RFC**

Type

1Header
Style**A**Enclosure
Style**126**Voltage
Code

NOTE: Consult factory for other cable types and lengths.

**Hi-G CO., INC.**

580 Spring Street
Windsor Locks, Connecticut 06096
Tel. (203) 623-2481

**HI-G D'ITALIA s. p. a.**

CORSO DELLA REPUBBLICA, 340
CISTERNA DI LATINA, ITALY
TEL. 9699666/7 - CABLE: DIGITAL
TELEX: 62412 HIG

1/77-5M Printed in U.S.A.